Hydrologic Model Manager

Short Name	DWSM
Long Name	Dynamic Watershed Simulation Model
Description	
Model Type	Physically-based hydrologic and nonpoint source pollution.
Model Objectives	Simulations of rainfall-runoff (surface and subsurface), soil erosion and sediment transport, and mixing and transport of agricultural chemicals.
Agency _Office	Illinois State Water Survey, Watershed Science Section.
Tech Contact	Dr. Deva K. Borah, Illinois State Water Survey, Watershed Science Section, 2204 Griffith Drive, Champaign, IL 61820.
Model Structure	Conservation of mass and some momentum for water and its constituents.
Interception	
Groundwater	
Snowmelt	
Precipitation	
Evapo-transpiration	
Infiltration	
Model Paramters	Main parameters are: runoff curve number or saturated hydraulic conductivity, Manning's roughness coefficient, flow detachment coefficient, chemical partition coefficient, and chemical mixing parameter.
Spatial Scale	Watersheds of sizes ranging from few acres to several hundred square kilometers are divided into hydrologic units defined by topographical or natural boundaries and further divided into overland, channel, and reservoir segments.
Temporal Scale	Several days of storm events divided into constant time intervals ranging from few minutes to few hours.
Input Requirements	Physical data representing the watershed, initial moisture, soil and agricultural chemicals and meteorological data representing the rainfall events.
Computer Requirements	Currently running in personal computers (PCs) and can be run in other computers having Fortran Compilers.
Model Output	Time varying discharges of water, sediment, and chemicals at desired stream sections and reservoir outlets, including at the watershed outlet, and their volume and yield summaries.
Parameter Estimatn Model Calibrtn	Runoff curve number or saturated hydraulic conductivity, Manning's roughness coefficient, flow detachment coefficient, chemical partition coefficient, and chemical mixing parameter.
Model Testing Verification	Tested and verified in various U.S. watersheds.
Model Sensitivity	Sensitive to runoff curve number, saturated hydraulic conductivity, Manning's roughness coefficient, flow detachment coefficient, chemical partition coefficient, chemical mixing parameter, sediment particle size distribution, and rainfall intensities and their temporal distributions.
Model Reliabiity	Found reliable in case studies.
Model Application	Applied to various watersheds in the U.S. as part of research and practical engineering projects.

Documentation	Partially documented, full documentation in progress.
Other Comments	The model has three versions: DWSM-Hydro, DWSM-Sed, and DWSM-Agchem, dealing with hydrology only; hydrology and sediment; and hydrology, sediment and chemicals, respectively.
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Developer	
Technical Contact	
Contact Organization	